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McKenna Long & Aldridge LLP  
1900 K Street NW  
Washington, DC 20006

EXAMINER
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PADGETT, MARIANNE L

ART UNIT	PAPER NUMBER
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1717

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06/07/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,328	<b>Applicant(s)</b> WILCZAK, WOJCIECH A.	
	<b>Examiner</b> MARIANNE L. PADGETT	<b>Art Unit</b> 1717	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 3/21/11 & 1/21/11.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/21/11</u> .   | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1717

1. First, it is noted that while applicants' **3/21/11 amendment** to the claims is formally noncompliant in that it shows **claim 18** as being amended, where this amendment was actually made in the 11/22/10 amendments; however as this merely repeats a correction that was previously made, it is not considered to cause any confusion as to the proper content of the claims, thus no noncompliant notice will be issued.

2. Applicants' **3/21/11 amendment** to independent claims 1 & 12, have clarified their intended process; however with respect to the **process claim 1**, it is noted that *as written* any radiation curable composition in any form may be applied & any radiation curing technique may be used on the compound, either **during or after** its application to the plasma polymer coating on the substrate. It is further noted that since plasma is a source/source of radiation, there may be considered some confusion, as to whether or not the negative limitation with respect to the plasma polymer coating is somehow limiting the subsequent coating processes or not. It is also noted that the cited support on pages 5-6 & page 3 of the original specification, while being completely generic with respect to the radiation curable coating composition on **page 6**, the 2nd full ¶, is of more limited scope than the amended independent claims in that it states that "A radiation curable coating composition is applied to the plasma polymer coated surface...., and **then** radiation cured" (emphasis added). This generic disclosure has a clear temporal sequence, which is *not necessitated* by the amended claim language, and would cure at least one part of the above noted ambiguity, although there would still be the question as to whether *in-situ* or remote plasmas were being excluded as radiation curing sources (i.e. whether the claimed is excluding ever applying any plasma to the substrate in any further processing), or if the preceding limitation was only [intended to be] excluding any plasma applied to the plasma polymerized coating that was applied between its deposition & subsequent applying of the radiation curable composition. Note generic teachings of radiation curable compositions, cannot be considered to exclude plasma as a source of radiation merely because it is not mentioned in the particularly disclosed radiation sources (e.g. electrons

Art Unit: 1717

or UV in the ¶ bridging **pages 10-11**, or UV radiation used in **Exs. 2-3**), which provide exemplary 'typical' energy ranges & devices, as an exemplary disclosure, while not supporting claiming nondisclosed members of a generic grouping, also does not exclude those members. However, the temporal disclosure on **page 6** & in the examples, could be considered to support a negative limitation with respect to plasma employed in a time intervening between the two layer depositions, but specifying the radiation curing process more precisely would be required to remove the possibility of a subsequent plasma [deposition or] treatment as a means of [applying &] curing the claimed radiation curable compound, especially considering that plasmas may supply both the UV radiation &/or electrons.

With respect to the **product claim 12**, the amendments thereto constitute method requirements that make no clear, necessary or determinable difference in scope of the product produced, because given completely generic plasma polymers having generic [residual] functional groups, there is no determinable structural differentiation between such generic plasma polymers that have or have not been plasma treated before application of a generic radiation curable coating composition (either before or after it is cured). Note that whether the surface functional groups of the plasma polymer are residual, or induced by some subsequent treatment (e.g. plasma or otherwise), cannot be considered to make any necessary structural difference for the generic polymers, as generic bonding may be expected to be present in either process sequence, where more variation in structure would reasonably have been expected due to possible compositional variations encompassed by the generic limitations, than any process stipulations made in these extremely broad claims.

3. **Claims 1-20** are rejected under 35 U.S.C. **112, first** paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Art Unit: 1717

As noted above in the discussion of scope, **independent claim 1** lack support in the original specification for the exclusion of plasma applied to substrate having a plasma polymer coating thereon, when that exclusion has absolutely no time constraints, since plasma is a form & source of radiation, which may be a source of electrons & UV radiation, thus given the disclosure in the specification of generic radiation subsequent layer applied to the radiation curable composition, exclusion of all possible applications of plasma after an initial plasma polymer coating deposition is considered to encompass **New Matter**. The dependent claims 2-11 do not correct this problem.

Reviewing both applicants' arguments of support & wording in the specification, it appears reasonable to the examiner that this problem in **claim 1** could be corrected by inserting --then-- before "radiation curing..." in the **last line**, plus in lines 5-6, changing "thereon, applying a..." to --thereon before applying a radiation curable composition; applying the...--. Such language would precisely delineate when plasma is excluded from the process in a scope which reasonably appears to be supported, as discussed above in section 2.

With respect to the product claim 12 provided temporal constraints, they are closer to what is actually disclosed in the original body of the specification, however the requirement of "no additional plasma has been applied thereto before the reaction product is formed" cannot be considered to be supported, since generic radiation is disclosed as applied for cure in the radiation curable composition, and the original specification cannot be considered to provide support for excluding plasma as a means of radiation curing of the radiation curable composition. Language that would be supported as consistent with the original specification would be replacing "before the reaction product is formed" with -- before radiation that cures the radiation cured composition is applied--. If applicant wants to exclude 38 EDA should be used from curing from being plasma or using plasma as a source, it appears that a positive limitation would be required therefore, if it is to be supported, although it is not clear to the examiner that such a limitation would have any differentiating structural effect on the product.

Art Unit: 1717

4. **Claims 1-11** are rejected under 35 U.S.C. **112, second** paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In **claim 1**, line 5, "**a** plasma polymer coating" (emphasis added) should employ the article "the" or "said", so as to show clear antecedent basis, & to *necessarily* refer to the coating introduced in line 2, as appears to be intended from applicant's Remarks. Note with above use of the article "a", while the same substrate is being referred to as in line 2, the coating thereon might not be the same, i.e. it ambiguously could be a different state than "a plasma polymer coating containing residual unpolymerized polymerizable functional groups". While the context of the claim appears to probably be intending to require this to be the same substrate with the same coating, the use of the article that does not necessitate the antecedent basis, contradictorally implies that it need not be the coating containing the residual functional groups, thus creating an **ambiguity** of scope.

Related to the above discussion of scope in section 2, it is further noted that **claim 1**'s negative limitation of "without applying additional plasma to set substrate..." may be considered ambiguous in that the subsequent limitation of "applying radiation curable composition... and radiation curing..." generically includes all sources of radiation, that encompass plasma, such that there are contradictions in the claim process sequence. In other words, the scope of what constitutes radiation curing is uncertain or ambiguous, as on one hand the negative limitation could be read broadly to exclude any plasma ever impinging on the substrate ever again, unless the plasma polymer coating has been removed therefrom; or it could be considered only way to relate to plasmas that might impinge on the coating so as to exclude plasma deposition of the radiation curable composition, but not exclude plasma post-treatment to cause curing of the composition; or it might only prefer to plasmas in pinched on the coating but having nothing to do with the radiation curing of the radiation curable composition that is a separate limitation; etc. Therefore, this amended claim may be considered to be of **ambiguous scope**. It is noted that language

Art Unit: 1717

discussed above in section 3 would also reasonably remove this ambiguity. Note as the negative limitation is not set forth in the specification, it cannot be read in light of the specification to provide further interpretation of any ambiguities in its language.

5. The following is a quotation of the appropriate paragraphs of **35 U.S.C. 102** that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of **35 U.S.C. 103(a)** which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 12** is rejected under **35 U.S.C. 102(b)** as being clearly anticipated by **Timmons et al.** (5,876,753).

**Claims 1 & 9** are *ambiguously* rejected under **35 U.S.C. 102(b)** as being anticipated by **Timmons et al.** (5,876,753).

Applicant's arguments on page 11 of their 3/21/11 response repeat phrasing from the claims, but provide no explanation how the product structure produced in any way differs from product structures that would be produced by Timmons et al.'s teachings, thus with respect to the product, applicant's arguments are completely unconvincing, as it does not matter whether or not identical process techniques were used for making the product, only what the final structure is produced.

Art Unit: 1717

With respect to the process claim 1, it can only ambiguously be included in this rejection for the claims as amended, since on one hand sequential plasma operations, where plasma is used to deposit or treat the radiation curable material are excluded, but on the other hand all radiation curing deposition techniques & all types of radiation used therefore are included with respect to the applied composition. The former would remove the teachings of Timmons et al. as a 102, all while the latter would include the, thus the ambiguous status. While the original specification does not provide any clear interpretation for the claims, as discussed above, the examiner has suggested amendment possibilities that would remove claim 1 from even ambiguously reading on by Timmons et al. alone. However, for product claims, it is not sufficient to claim deposition of generic materials by a particular process, unless those processes would *necessarily* for all generic materials claimed produce distinct structures due to the process, which is not the case for generic polymer deposited via bonding to on generic polymer, as the successive plasma polymer depositions of Timmons et al. clearly create such structures.

As previously noted, **Timmons et al.** ((5,876,753): cols. 6-12) has extensive discussion of specific **plasma polymerization** means to **increase specific functional group retention** for use in subsequent bonding processes, & it remains accurate that for applicant's claims as *presently written*, it is not necessary to apply teachings requiring retention or creation of active functional groups on the order of the teachings of Timmons et al. (although they are relevant to all the following plasma polymerization teachings), this rejection can provide a particular emphasis to the broadness of applicant's claims, especially the independent claims.

See **Timmons et al.** (753), col. 13, lines 1-36, teaching use of **plasma deposited film** of **hexamethyldisiloxane** to successfully anchor a plasma-generated organic film having specific desired functional groups, where the intermediate sublayer works to strongly anchor the organic films, providing both adhesion to the inorganic substrate & providing a "silanize" solid surface bridging chemical dissimilarities, so providing organosilicon functionalities enabling the organic monomers of the



Art Unit: 1717

subsequent plasma polymerized deposits (i.e. a composition that is deposited & cured via radiation, which happens to also be plasma, which as discussed above & previously noted was & is encompassed by applicant's claims.

7. **Claims 1 & 11-12** are rejected under 35 U.S.C. **102(b)** as being clearly anticipated by **Grobe, III et al.** (6,200,626 B1) or **Pasic et al.** (6,582,754 B1).

**Claims 2-4, 10 & 13-15** are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Grobe, III et al.** (6,200,626 B1) or **Pasic et al.** (6,582,754 B1).

**Grobe, III et al.** ((626): abstract; col. 1, lines 7-17; col. 3, lines 1-14; col. 7, lines 33- 49 & 64- col. 8, lines 4 & 26-68, esp. 26-34, 50-54 & 62-65; col. 9, lines 1-7 & 17-67+, esp. lines 23-29; col. 12, lines 22-62, esp. 54-62; col. 16, lines 53-64) teach providing a silicone substrate (e.g. contact lens) with a thin hydrocarbon coating on which free radical graph polymerization is subsequently performed. The thin hydrocarbon coating may be formed via a plasma polymerized deposition with hydrocarbons, such as unsaturated diolefins, like 1,3-butadiene or isoprene, which are preferred as producing resulting coatings having unsaturated sites available for graph polymerization. It is taught that any conventional initiation techniques for graph polymerization may be employed, inclusive of employing UV free radical initiators, with mention that the initiator is present in the grafting monomer mixture & that the curing process used will depend on the particular initiator used, as well as the physical characteristics of the monomer mixture (col. 12, lines 54-62). Although a specific example employing photo grafting is not provided, this teaching clearly indicates employing UV radiation to cause bonding to the previously applied plasma polymer, which is taught to preferably have been formed using diolefins that leave reactive sites, i.e. residual functional groups, after plasma polymerization.

**Pasic et al.** ((754): abstract; col. 1, lines 1-5 & 45-63; col. 3, lines 16-55+, esp. lines 24-26; col. 5, line 21-col. 6, line 48, esp. lines 22-45; col. 7, lines 4-20; col. 9, lines 50-62) teach modifying a surface by supplying a compound having ethylenically unsaturated groups suitable for covalently bonding to the

Art Unit: 1717

surface of the material to be modified, where the process of deposition may be plasma polymerization, as suggested in col. 3. The plasma polymerization is also specifically exemplified in Ex. 1 on col. 9, which notes that the plasma deposition techniques deposits a thin polymeric interfacial bonding layer, which for the example of using allylamine vapor is specifically stated to be amine functionalized. Subsequently, such plasma polymerized substrates are treated with a vinyl monomer having a reactive or crosslinking group that may be grafted on to the modified substrate surface. The polymerization of the vinyl monomer is maybe initiated either thermally or by irradiation, with UV radiation particularly suggested.

With respect to the radiation cured composition in dependent process or product claims, requiring the composition was formed using a radiation cured gravure ink, a radiation cured flexographic ink or a radiation cured lithographic ink, the examiner knows of no distinguishing characteristics which may distinguish any deposits from these inks from each other in a final product, or how their product layers would be distinguished from any other solution that is radiation cured. With respect to the process, calling the "ink" by the name of a deposition technique, does not require that technique to be employed, as it has not been positively claimed. Note, either **Grobe, III et al.** ((626): col. 9, lines 50-57+; col. 12, lines 22-23 & 32-44) or **Pasic et al.** ((754): col. 6, lines 26-33) teach their grafted monomer mixtures that may be radiation cured, are deposited in solutions that are subsequently grafted, including by curing as claimed, such that there is no apparent necessary difference between the product of the taught solutions & the products of the claimed composition source, which are made of no necessary components, except a generic radiation curable material. It is further noted that while the claim that these are "inks" has implications of the presence of dyes or pigments were some type of colorant, calling something an ink does not actually necessitate the presence of a colorant, as inks may also be clear. Therefore, while these references do not use the term "ink" & do not employ the particular techniques of flexographic, lithographic or gravure coating, it would have been obvious to one of ordinary skill in the art to employ any solutions providing the taught compositional components, whether they are called inks or not &

Art Unit: 1717

whether they have been employed in such coating techniques or not, where solutions capable of being employed in such claim techniques would reasonably have been expected to be encompassed by the taught useful solutions, although they need not even be capable of use in such techniques, as long as the cured & dried coating will have an equivalent structure. Note for the product as presently claimed, it is completely irrelevant whether the applied solutions ever would be employed in such deposition techniques.

With respect to electron beam curing, while neither Grobe et al. or Pasic et al. teach electron beam specifically, Pasic et al. (col. 6, lines 35-36) teach generic use of irradiation sources for grafting their curable layer, while Grobe, III et al. (col. 12, lines 45-62) generically teach free radical grafting where UV initiators may be employed but curing will depend on particular initiator is employed & polymer mixture, therefore for either teaching, it would've been obvious to one of ordinary skill in the art to optimize curing techniques with respect to particular composition & vice versa, inclusive of the use of electron beams for the taught grafting curing operations, since given grafting operations may employ UV in either case, or generic free radical polymerization or generic irradiation, respectively, irradiation techniques are being employed & electron beam curing is conventionally used analogously to UV curing, where the main difference will be types of initiators required, where teachings relevant to optimization/choice of initiators is presented by both references.

8. **Claims 12 & 16-17** are rejected under 35 U.S.C. **102(b)** as being anticipated by **DAIMON et al.** (4,891,264).

**Claims 1, 5-7, 9-12 & 16-17** are rejected under 35 U.S.C. **102(b)** as anticipated by or, in the alternative, under 35 U.S.C. **103(a)** as obvious over **DAIMON et al.** (4,891,264), optionally as evidenced by **Wu et al.** ((5,922,161) set forth previously in sections 11 & 9 of the 12/21/10 & 6/21/10 rejections, respectively).

Art Unit: 1717

**Claims 2-4 & 13-15** are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Daimon et al.** (264).

Alternatively, **Claims 1-7 & 9-17** are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Daimon et al.** (264), in view of **Timmons et al.** ((5,876,753) or **Grobe, III et al.** (6,200,626 B1) or **Pasic et al.** (6,582,754 B1).

In the paragraph bridging pages 7-8 of applicant's 3/21/11 remarks, applicants allege a fragmented quote from the PTO discussing Daimon et al. (where the main substance of the quote has been provided in brackets, i.e. inserted by applicant), which is said to be on page 4, lines 1-3, presumably of the last action (12/21/2010), as it is the action under discussion, however there is no discussion of Daimon et al. on this page, which is discussing 112 rejections. As the examiner cannot tell what is allegedly being quoted, what applicants had left out & or on what basis applicant is adding words to an otherwise substanceless quote, no meaningful response to this argument could possibly be made. It is possible applicant has extracted a few words from page 4, lines 1-3 of the 6/21/10 final rejection, but if so they have completely changed the context of those extracted words to mean essentially the opposite of what was actually said, a tactic best not further discussed, but hardly convincing. With respect to applicant pointing out the teachings on their application's page 5 that discuss modifying prior art plasma techniques, where no specific plasma polymerization techniques is actually taught, this provides no basis for requiring any particular modification need be specifically taught by any reference, as implied by applicant's discussion. In the final sentence of the same paragraph (page 8) argue "Daimon does not teach or suggest any reason to modify the art plasma polymerization process", which is presumably referring to prior art, but it is not necessary for a reference to teach something using the for same phrasing as taught in applicant's specification, or that they must modify some unspecified prior art for their teaching to have the required affect. In fact it was previously stated, with respect to applicant's reference to the last two lines on their specifications page 5, that this sentence refers to unspecified prior art as

Art Unit: 1717

being modified by applicant's invention, has no bearing on the teachings of Daimon et al. Furthermore, the examiner noted that the same paragraph continues on page 6, and recognizes that unreacted groups were known in the prior art, although **sometimes** such unreacted groups were considered by unspecified prior art as a deficiency, thus applicant's specification clearly admits the known presence of unpolymerized functional groups still capable of polymerization present in prior art processes, but again has no direct bearing on the teachings of any specific reference, such as Damion et al.

Applicant's amendments to the claims are still not considered to make any necessary product structural differences that effect of there being read on by the teachings **DAIMON et al.** (264), especially the product claims which clearly encompass the claimed generic substrate having a plasma polymerized coating thereon which is bonded to a further deposited coating.

As previously set forth, **Daimon et al.** teach surface treating a composite substrate (e.g. synthetic resin fibers) in order to enhance the adhesion of the "curing composition" that is applied thereto, where the means of treatment includes **plasma polymerization treatment**. The composition applied to the treated surface may be cross-linked and cured by one of a variety of radiation means, where curing options are inclusive of **UV & electron beam**, and where the compositions may be composed of various curable resins inclusive of epoxy resins and acrylate resins, as well as various reactive diluents, such as various glycol diacrylates, etc., various **pigments** or **dyes**, and various other modifiers. Means of applying the curable composition are taught to include "coaters of various print types such as screen, offset, **gravure**, letter press, **flexographic** printing, etc."

While **Daimon et al.** do not disclose that their curing compositions may be ink, the teachings of using pigments and dyes in the compositions, and of deposition via various claimed printing techniques, would have been suggestive to one of ordinary skill in the art that the compositions taught by this reference are suggestive of or encompass inks, particularly the specifically claimed radiation curable gravure or radiation curable flexographic ink, as Daimon et al. teach applying their curable compositions

Art Unit: 1717

via gravure or flexographic printing techniques. This either implies that inks were used, since printing is occurring, or would have made it obvious to one of ordinary skill in the art to use an ink comprising taught compositions, since one is printing, especially considering that no actual composition for specific printing techniques are claimed, only intended uses. With respect to lithographic printing, it is another standard printing technique, and the disclosure is explicitly not limited to the specific printing techniques listed, hence it would've been further obvious to one of ordinary skill in the art that virtually any conventional printing technique is contemplated to be useful, thus making lithographic techniques another obvious option. Note with respect to product claims 13-15, where the inks employed are described by the technique by which they were meant to be applied, that this requires no specific composition or structure that can be determined by the examiner, and can be considered to read on any radiation curable ink composition in the claimed product. In Daimon et al., particularly see abstract; col. 2, lines 5-26 & 36-54; col. 4, lines 44-col. 5, lines 35 & 51-55; col. 6, lines 50- 68, esp. 60-62; col. 7, lines 10-24 & 36-52; col. 8, line 59-col. 9, line 8.

**Applicant has previously argued that Daimon et al.'s teaching of plasma polymerization cannot teach or suggest formation of a reaction product with unpolymerized polymerizable functional groups, as they do not specifically discuss such residual groups. However, these arguments fail to take into account the **taught reason** for performing the taught **plasma polymerization treatment** is to enhance the adhesion, specifically to cause surface wetting tension of the surface treated to be adjusted to 35 dyn/cm or more (col. 3, lines 38-44+; col. 6, line 50-col. 7, lines 9), especially since enhancing the adhesion of a coating that is being crosslinked and cured onto a polymeric surface as taught, implies linking to that surface. Therefore, plasma polymerization processes that produce these taught surface tensions could not be lacking in the generically claimed residual polymerizable groups as effectively asserted by applicant. Note, one of ordinary skill & competence in the plasma polymerization & adhesion arts would understand these basic concepts apply to the teaching of Daimon et al. Furthermore, as**

Art Unit: 1717

applicant's claims read on even minimal presence of unpolymerized functional groups (i.e. as few as 2), it would be virtually impossible for any plasma polymerization, even if deposition didn't provide the taught surface wetting tension, to not contain that number of polymerizable functional groups. The claimed "residual unpolymerized polymerizable functional groups" is inclusive of any functional group present after the plasma polymerization deposition, which is capable of undergoing polymerization (i.e. inclusive of cross-linking & the like) with any polymeric entity. Note that the corona discharge also mentioned by applicant's arguments as taught by Daimon et al., would even supply polymerizable functional groups, as a corona discharge treatment applied to synthetic resin fiber substrates as contemplated in Daimon et al. to produce taught surface tensions would instead create a functional groups on the substrate surface, a different process from the plasma polymerization, but as taught having analogously effective results. Therefore, Daimon et al.'s teaching of plasma polymerization to provide enhanced surface adhesion of taught surface tensions would inherently have such unpolymerized polymerizable functional groups as generically claimed, thus applicant's arguments are not convincing. Daimon et al.'s process may not (or may) provide the type or quantity or the like as *desired* by applicant, however applicant's claims are completely generic with this respect, such that even a minimal amount as may be considered inherent in Daimon et al.'s teachings, may be considered to read the claims as presently written. It is not necessary for a reference to describe a process in terms of the same mechanistic description provided by applicants, for the reference to be covering the same concepts.

As previously set forth & noted with respect to applicant's arguments 3/19/2010 arguments & remains relevant for providing evidence applicant appeared to have dismissed without actually discussing. With respect to **Daimon et al.**, which effectively state taught plasma polymerization processes performed for the express purpose of enhancing adhesion, applicant appeared to assert would have no necessary polymerizable functional groups in the plasma polymer; in support of the examiner's above arguments disagreeing therewith, applicant's attention is directed to **Wu et al.** (5,922,161) as a

Art Unit: 1717

teaching reference (i.e. evidence), specifically col. 1, lines 14-30 & col. 2, lines 2-7, which discuss old and well-known concepts with respect to polymer surfaces having bonding difficulties because of low surface energies ( i.e. low surface tensions) or chemical inertness, with discussions of practical applications requiring specific levels of wettability & where treatments developed to achieve such requirements include plasma treatment &/or plasma polymerization. Wu et al. state that is known to significantly improve bonding ability of the treated polymer or to activate the desired level of wettability as a result of incorporation is of different types of chemical species into the polymer surface, which may be done as a result of plasma polymerization. Hence, these teachings of the known mechanism by which plasma polymerization increases the wettability, i.e. surface energy, provides evidence of what occurs when Daimon et al.'s taught plasma polymerization is employed as a means to achieve their taught surface wetting tensions, thus showing that such processes are inherently incorporating groups (i.e. species) in the plasma polymer. Therefore, as taught in Daimon et al. enabling the subsequent radiation polymerization to bond to the treated [plasma polymerized] surface, which may be effectively interpreted as encompassing polymerization or cross-linking with the plasma polymer on the surface. It is not necessary to know what specific functional groups are present with respect to Daimon et al.'s process, in order to know that there are necessarily functional groups as claimed, especially considering that the present claims are so very broad as to encompass all possible functional groups that may be deposited by or induced by the plasma polymerization process (i.e. species referred to by Wu et al.), thus the claims are effectively as broad as Daimon et al.'s teachings, only spelling out the known mechanism by which Daimon et al.'s process must operate in order to perform as taught.

Alternatively, it has long been well known in the art of both plasma polymerization & subsequent deposition on the plasma polymerized layers, that retention of functional groups for providing active sites for subsequent deposit, such as grafting or bonding directly to those sites, is an effective means of providing multilayer structures, as is demonstrated by the teachings of **Timmons et al.** ((5,876,753): col.



Art Unit: 1717

6-12, esp. col. 6, lines 18-45; col. 7, lines 15-62+; col. 9, lines 1-45, etc.) or **Grobe, III et al.** (6,200,626 B1) or **Pasic et al.** (6,582,754 B1), all discussed above, providing teachings on specific series on of plasma polymerized coatings followed by another polymer coating that may be radiation cured, as specifically discussed above. Furthermore, Timmons et al., provides more generic teachings specific to use & optimization of plasma polymerized materials for retention of specific functional groups for specific further processing, generally applicable for tailoring plasma processing for specific desired sequential depositions, including when the second "coupling reaction of molecules" is performed on the plasma polymerized surface in solution. Therefore, it would have been further obvious to one of ordinary skill in the art when employing the teachings of Daimon et al. to use a plasma polymerized layer in order to enhance adhesion to the subsequently applied coating solution that may be radiation cured (e.g. UV or EB), to provide optimization for the taught enhanced to adhesion via techniques as taught in any of **Timmons et al.** ((5,876,753) or **Grobe, III et al.** (6,200,626 B1) or **Pasic et al.** (6,582,754 B1), as these references demonstrate particular mechanisms that would provide enhanced adhesion, including for materials overlapping with the particular macromolecule substances as employed by Daimon et al. (column 4, lines 44-column 5, lines 20 & 63-68+; (meth)acrylates, vital containing compounds, etc.), thus processes discussed in the secondary references would reasonably have been expected to provide specific plasma polymer techniques enabling the taught enhanced adhesion from plasma polymerization, dependent on particular subsequent composition to be applied. Note these secondary references further supporting above discussions with respect to inherent/obviousness of the presence of functional groups causing wettability in plasma polymerized deposits used to provide enhanced adhesion, especially noting that Grobe et al. (column 9) teaches that for any cases where the hydrocarbons employed for the plasma polymerization step are not their preferred diolefins that leave unsaturated sites, then an activating or initiating step is further required for effecting grafting.

Art Unit: 1717

As previously set forth, with respect to applicant's arguments concerning Daimon et al., in the 11/22/2010 response (p. 6-8), the examiner has previously presented clear reasons as to why the presence of residual functional groups on the surface is considered inherent (repeated below), given Damion et al.'s teachings on the necessary abilities of the plasma polymerized deposits to supply adequate adhesion due to wetting tension (col.7, lines 6-9), which may be equivalently supplied by corona treatment. However, applicant's arguments provide no reasons to refute these conclusions, as applicant essentially only argued that the inherent feature of residual functional groups is not explicitly taught, which is not convincing, as it provides no credible reason why plasma polymerized deposits providing taught adequate wetting tension would be able to do so without the presence of any functional groups, noting any functional group present in the plasma polymerized deposit & is contributing to the surface wettability, is by definition a residual functional group. Note that Damion et al. does not say that any & all plasma polymerized deposition is acceptable as a pretreatment, but that plasma polymerization may be employed that produces the desired adhesion, i.e. surface tensions adjusted to give 35 dyn/cm or more, preferably 38 dyn/cm or more. While as previously stated, this is considered to require the inherent presence of functional groups in plasma polymerization coating, there are no specific examples provided for this option, but alternatively when performing the taught plasma polymerization option for creating surface wettability, anyone of ordinary skill & competence in the plasma polymerization art would employ routine experimentation to determine appropriate monomers & plasma conditions dependent on the particular plasma deposition techniques (e.g. apparatus, etc.), intended coatings & substrates, to determine appropriate conditions for producing wettability as taught with particular consideration that the preferred effective corona technique is old and well-known as creating oxygen functional groups, thus an effective plasma polymerization process to produce like surface tensions would reasonably have been expected to employ reagents that would produce a plasma polymer surface with analogous functional groups in order to create analogous taught surface tensions.

Art Unit: 1717

8. **Claims 1, 5-7, 9, 11-12 & 16-17** are rejected under 35 U.S.C. **102(b)** as being anticipated by **VARGO et al.** (6,428,887 B1), as evidenced by **Gardella, Jr. et al.** ((4,946,903) incorporated-by-reference).

**Claims 2-4, 10 & 13-15** are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Vargo et al.** (887), as evidenced by **Gardella, Jr. et al.** ((4,946,903) incorporated-by-reference).

Applicant's 12/22/2010 arguments concerning Vargo et al. on p. 8-9 of their response, appear to be contending that their amendments to the claims have excluded the teachings of Vargo, as they appear to be contending that a plasma treatment can not be a plasma polymerization (middle of page 9), however these arguments are not convincing, nor are they accurate; because if a plasma process providing reactive functional groups via a process creates a plasma polymer, such as the taught reaction evidenced by **Gardella, Jr. et al.** (903), it reads on applicant's claimed a plasma polymer irrelevant of whether or not the surface on which the plasma polymerized functional group layer was deposited, was itself a plasma polymer. There are many means of creating plasma polymers, hence plasma polymer coatings or plasma polymerized coatings, and applicant's claims *as written* have still not clearly distinguished from any of them. This argument remains relevant to the claims as amended in the 3/21/11 response, as to reiterate, the substrate on which the plasma polymer is formed is not prohibited from being a plasma polymer deposited surface.

Applicant has previously argued that the polymerized fluorocarbon deposits on nonhalogen substrates only have H or O substituted for F, **however** while **Vargo et al.** may perform such a sequence, their teachings are not so limited. Specifically, the plasma treatment of the nonhalogen substrates, including plasma polymerized depositions of fluorocarbons, is specifically discussed as providing oxygen or oxygen containing groups on the surface to produce the modified oxyhalo polymer-containing substrate (col. 3, lines 30-40), where the **plasma gas**/vapor mixtures employed to create these structures include methanol & formaldehyde (i.e. **polymeric monomers**) that are being **plasma attached** to the

Art Unit: 1717

polymer surface (col. 5, lines 56-64; Ex. 1, esp. col. 13, lines 10- 50), so may be considered plasma polymerized as organic monomers are attaching to **thus polymerizing with polymeric structures**, e.g. plasma polymerization), especially considering incorporation-by-reference of **Gardella, Jr. et al.** ((4,946,903): abstract; col. 3, lines 30-col. 4, lines 49, esp. 30-38), which discusses the explicitly taught plasma process with the taught methanol & formaldehyde monomers creating low molecular weight containing functional entities including alkoxy functionalities, inclusive of not just methoxy, but also ethoxy, or epoxy or R'-CO-, where R' = H or alkyl, particularly C<sub>1</sub>-C<sub>5</sub> lower alkyls, including methyl, ethyl, propyl, isopropyl, etc., where the examiner notes that such oxygen containing functionalities could not have been formed from methanol & formaldehyde precursors without plasma polymerization occurring. An analogous teachings are found in the other incorporation-by-reference of **Gardella, Jr. et al.** ((5,627,079): abstract; col. 4, lines 18-30 & 50-col. 5, lines 21; col. 6, lines 25-col. 7, lines 35; col. 9, lines 20-60, etc.). This may not (or may) be it the type of plasma polymerization reactions to applicants intend to employ in their own processes, however such plasma polymerization reactions are covered by applicant's broad claim terminology. Thus, applicant's arguments with respect to Vargo et al.'s plasma polymerization processes not providing residual, i.e. remaining functional groups, are not convincing.

With respect to applicant's arguments that the adhesives are only UV cured when they are employed to attached to something else, this is not convincing as in listing how the various polymeric adhesives may be attached to the reactive sites on the oxy halogenated polymer surfaces Vargo et al. specifically disclose on col. 9, lines 59-67, specifically 65, that the "above named adhesives... **method of application** of the adhesive is dependent on the particular enduses and the adhesive. For example, adhesives can be brushed, sprayed,...**UV coated**...", which clearly is applying via use of radiation, and while the teaching of col. 9, lines 49-52 state "Both thermoplastic and thermosetting adhesives are cured (set, polymerized, solidified) by heat, catalysts, chemical reaction, free radical activity, radiation, a loss of the solvent, etc., as governed by the particular adhesives chemical nature..." could ambiguously mean

Art Unit: 1717

curing after bonding as asserted by applicant, it does not necessarily mean so, nor does it obviate the subsequent teaching of UV coated. Therefore, applicant's arguments are further unconvincing. While Vargo et al. may not be performing a process as actually contemplated by applicant, *as presently written* applicant's claims do not distinguish over the processes of Vargo et al.

**Vargo et al.** disclose adhesive-oxyhalopolymer composites, where an oxyhalopolymer layer with functionality groups that provide sites to which to bond the adhesive material, may be deposited via a plasma polymerization process onto the substrate. The adhesive is to be applied may include polyacrylates or epoxides, may be cured by radiation such as UV, may be prepared such that they are transparent, colored or opaque, and it is mentioned that they may be applied by gravure coating techniques. Vargo et al. does not mention that their compositions may be inks, nor particularly suggest flexographic or lithographic techniques, but the reference provides for individual components required by ink compositions, where it is noted that being an adhesive does not prohibit a composition from also been described as a member of the class of inks, hence analogous to above discussion, it would have been obvious to one of ordinary skill in the art to employ taught colored compositions that are of the consistency that may be called an ink, especially as gravure coating, i.e. a printing technique, may be employed, thus is suggestive of ink. It is further noted that the deposition techniques taught by Vargo et al. are inclusive of "... nip rolled, reverse rolled, gravure coated, UV coated or by any practical method", hence the application of other conventional printing techniques such as the claimed flexographic or lithographic techniques would have been obvious to one of ordinary skill in the art, as they would have been expected to be effective given the taught broad applicability to generic printing & to a variety of specific printing techniques. In Vargo et al., particularly see the abstract; col. 1, lines 11-16; col. 6, lines 34-45+; col. 7, lines 6-13 & 31-56; col. 9, line 35-col. 10, line 38, esp. 24-38; col. 12, lines 8-25 & 55-63; Ex. 1, esp. col. 13, lines 53-62 & table 1.

Art Unit: 1717

9. **Claims 1-4 & 13-15** are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Daimon et al** (264), in view of **McGee** (2003/0207121 A1).

On page 11 of applicants 3/20 wound/11 response applicant state **McGee** & other references have not been "advanced to cure deficiencies in Daimon, it nor do they do so", however this is untrue, since applicants perceive that Daimon does not have residual functional groups, but **McGee** was explicitly applied as providing ethnically unsaturated moieties, and applicant has provided no discussion which even a temps to show otherwise, thus providing to completely unconvincing arguments.

The secondary reference to **McGee** explicitly shows UV curable inks that may be deposited by any known routine process, that is taught to be inclusive of gravure or flexographic or lithographic methods, and is inclusive of the teaching to promote adhesion of the curable inks through deposition of polymers with ethnically unsaturated moieties, thus is cumulative to and supportive of the above arguments concerning the obviousness of the radiation curable compositions being inks and the techniques by which it would have been obvious to apply them. In MCGEE, particularly see abstract; [0092]; Ex. 1, [0094]; Ex. 2, [0101].

Note that McGee supplies further evidence that plasma polymerized coatings of Daimon et al. deposited to promote adhesion, would have inherently or reasonably been expected to contain residual functional groups in order to fulfill their function, as this is secondary reference's teachings explicitly teach that polymers providing useful adhesion would have functional groups, i.e. ethnically unsaturated moieties, which provide those adhesion promotion capabilities. Thus, it would've been further obvious to one of ordinary skill in the art when considering the teachings of Daimon et al. to when employing plasma polymerized coating layers as treatment for providing taught adequate adhesion of the taught surface tensions, to consider the ethnically unsaturated surfaces moiety teachings of McGee in optimizing such plasma polymerized coatings, especially when employed with subsequent radiation incurable coatings desire to be deposited on such a polymer coated surface, as suggested by this combination.

Art Unit: 1717

10. **Claims 8 & 18-20** are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Daimon et al** (264), optionally considering **McGee** or **Timmons et al.** ((5,876,753) or **Grobe, III et al.** (6,200,626 B1) or **Pasic et al.** (6,582,754 B1) or **Wu et al.** ((5,922,161), as applied to claims 1-7 & 9-17 above, and further in view of **Goodwin et al** (WO 02/28548 A2) or **Willis et al.** (WO 00/78469 A2) or **Kamel et al.** (5,080,924).

**Daimon et al.**, while teaching the use of plasma polymerization to promote adhesion of a layer inclusive of radiation curable deposits that are cross-linking and cured thereon, does not teach any specific materials for the plasma polymerization adhesion layer. However, all the secondary references to **Goodwin et al** or **Willis et al.** or **Kamel et al**, teach the deposition of plasma polymerized coatings that promote adhesion of subsequent layers or deposits, where the plasma deposited layer has reactive or functional groups on its surface to provide such effects.

Specifically, **Willis et al.** suggest plasma polymerization of material such as glycidyl methacrylate, which retains reactive epoxy groups after the plasma polymerization deposition, for use in the adhesion processes. In **WILLIS et al.**, particularly see abstract; page 1, lines 1-8; page 3, lines 4-22; page 6, lines 22-page 7, lines 25; page 8, lines 17-34; page 9, line 22-page 10, line 15 & 33-35; Ex. 1, pages 11-13, esp. page 11, lines 5-17.

**Goodwin et al.** describes a plasma process, which may deposit organic materials inclusive of glycidyl methacrylate or halogenated alkenes on a wide variety of substrates, inclusive of plastics or metals or woven or nonwoven materials, etc., where the plasma polymer may be employed as an adhesion promoter. In **GOODWIN et al.**, particularly see abstract; page 2, [0004-7]; page 3, [0009]; page 4, [0011], esp. lines 8-20 & 22-25; page 6, [0014], esp. lines 30-32; page 8, esp. lines 1-3, 18-20 & 25-27.

Similarly, **Kamel et al.** plasma activates or cleans the surface, then plasma deposits and polymerizes materials inclusive of polyacrylic acid or the like, which provide pendant terminal carboxylic acid groups that are available to react, particular via cross-linking to desired organic materials. In

Art Unit: 1717

KAMEL et al., particularly see abstract; col. 6, lines 3-68; col. 7, lines 1-13 & 50-col. 8, lines 5 & 33-col. 9, line 15.

Given the teachings in any one of these secondary references, it would have been obvious to one of ordinary skill of the art that one employs the taught plasma polymerization to provide adhesion promotion for the radiation curable coating to be crosslink and cured thereon, to employ material suggested by these secondary references in the taught plasma polymerization process to enable the taught adhesion in cross-linking effects, as the secondary references are seen to provide cross-linking means via their taught functional groups that remain on the surface after the taught plasma polymerization of materials such as the various epoxy and/or acrylate compounds, hence are consistent with requirements of the primary reference.

11. **Claims 8 & 18-20** are rejected under 35 U.S.C. **103(a)** as being unpatentable over **Vargo et al.**, as apply to claims 1-7 & 9-17 above, and further in view of **Goodwin et al.** (discussed above).

While **Vargo et al.** suggests plasma polymerization to form oxyhalopolymers with oxygen-functional groups available for bonding and adhesion of adhesives, and note that a broader range of thermosetting materials or thermoplastic materials may be employed, which may include epoxy type resins or methacrylic acid, etc., Vargo et al. do not teach the use of plasma polymerized epoxies or acrylates to provide the functionalized adhesion promoting layer, however **Goodwin et al.** shows that epoxyacrylate compounds and halogenated compounds can be equivalently employed when deposited by plasma polymerization for adhesion purposes, hence it would've been obvious to one of ordinary skill in the art to **employ such alternative plasma polymers** given their shown **equivalence** and expected analogous effects on adhesion in the process of Vargo et al. to provide required functional adhesion groups for the subsequent adhesion of taught polyacrylate or epoxy adhesives that may be cured the irradiation such as UV, especially considering that such equivalent functionalized plasma polymerized coatings used adherents promoters would appear to require less steps providing an efficiency advantage.



Art Unit: 1717

12. **Other art of interest** includes: **Chabreck et al.** (WO 98/28026 A1) having further teachings relevant to plasma polymerization with retention of reactive groups for further deposition reactions.

**Other art of interest previously cited** in the PCT included: **KOLOSKI et al.** ((6,608,129 B1): abstract; col. 17, lines 6-30, esp.14-17; col. 19, lines 6-16; col. 20, lines 41-65; col. 21, lines 39-54; col. 22, lines 4-19; col. 31, lines 14-42) provides teachings of glow discharge polymerization of organic molecules which retain relevant functional groups, such as oxyfluorides, which may then be infused with radiation curable polymeric material, thus overlapping with above applied Vargo et al., & generically with Daimon et al., but redundant thereto; **LAKSIN et al.** ((6,236,361 B1): abstract; col. 1, lines 5-25; col. 2, lines 55-col. 3, line 21; col. 6, lines 45-67+; col. 7, lines 20-68+, esp. lines 23, 44-45 & 50-61) teach printing via gravure or flexographic techniques of actinic radiation, i.e. electron beam or UV, curable polymerizable inks; **CHEN** ((4,143,949): abstract; col. 2, lines 1-15 & 56-col. 3, line 39; col. 6, lines 3-40) teach forming hydrophilic coating via plasma polymerization of (meth)acrylates or silicones; **AFFINITO** ((6,228,434 B1): abstract; col. 2, lines 34-40 & 65-col. 3, line 20; col. 5, esp. lines 35-52) teach plasma polymerization via cross-linking of monomers in a glow discharge; **BADYAL et al.** ((2002/0114954 A1): abstract; [0002]; [0005-8]; [0013]; [0031-33]) teach plasma polarization of fluorocarbons or acrylic acid monomers; **BILYK et al.**((6,800,331 B2): abstract; col. 2, lines 41-57; claims, esp. 31) teach that plasma treatment of plasma polymers are known to be useful to improve bonding of subsequent polymer coating; **WU** ((4,587,156): abstract; col. 3, lines 11-col. 4, line 44) have teachings with respect to application of ink via gravure roll or flexographic printing, with initial use of a primer; **TSUNASHIMA et al.** ((4,908,277): abstract; col. 2, lines 25-30 & 67-col. 3, lines 15 & 39-68; col. 5, lines 47-66; col. 7, lines 30-47; col. 8, lines 47-53) teaches solution coating an in adhesion layer with functional groups maintained on its surface, then applying UV curable ink via gravure the roll; **HERGENROTHER et al.** ((5,750,206): abstract; col. 3, lines 24-col. 4, line 67; and claims) teaches a

Art Unit: 1717

plasma deposited hydrocarbon layer having a photoactive hydrophilic polymer deposited thereon that is activated by UV light; **GOTOH et al.** ((5,132,152): abstract; figures 1-2; col. 6) and **KUNZLER et al.** ((2004/0001181 A1): abstract; [0016] & [0019-20]) have teachings of relevant photocured layers, the latter including ink next to plasma polymer layers, but in the opposite order from claimed; & **Moser et al.** ((2006/0165975A1): not prior art) directed to successive plasma polymerization with depositions having functional groups, where it was noted that as plasmas are radiation sources, sequential plasma polymerizations may actually read on applicant's previously claimed but supported original broad claimed language, as well as the present language, as excluding "additional plasma" treatment before applying radiation curable composition, does not exclude the radiation curable composition being a vapor deposited plasma composition cured by the plasma radiation..

With respect to the **IDS of 12/24/2008**, **Muller-Reich et al.** (WO 2004/035857 A2) is the most relevant, as the English abstract teaches plasma polymerization deposition of a polymer layer retaining  $C=C$  &/or  $C\equiv C$  bonds, i.e. on polymerized functional groups, but the abstract while suggesting this material is used as an adhesive layer, lacks teachings on further coatings applied thereto, radiation cured or not (whether such a teaching is present in the rest of the German document is unknown). **Yasuda et al.** (4,980,196) provides teachings of plasma deposition of polymers that are desired to be reactive with the subsequent primer coating (inclusive of multiple layers of plasma polymerized deposits), but does not disclose whether or not such reactivity is due to unpolymerized functional groups & provides the option of plasma functionalizing the surface via a post-treatment with none polymerizing gas, plus the subsequently applied primer is not taught to include radiation curable coatings, providing examples of thermal cure, etc. The teachings of the cited German reference by **Droschel** are unreadable by the examiner.

13. Applicant's arguments filed 3/21/2011 & discussed above have been fully considered but they are not persuasive.

Art Unit: 1717

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

15. **Any inquiry** concerning this communication or earlier communications from the examiner should be directed to **Marianne L. Padgett** whose telephone number is **(571) 272-1425**. The examiner can normally be reached on M-F from about 9:00 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan, can be reached at (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Marianne L. Padgett/  
Primary Examiner, Art Unit 1717